

i. Proposal number.# 2001-F-212*

ii. Short proposal title.# Rainbow Trout Toxicity Monitoring*

APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN

1a1. Link to ERP Strategic Goals: What Strategic Goal(s) is /are addressed by this proposal? List the letter(s) of all that apply.

A. At-risk species

B. Rehabilitate natural processes

C. Maintain harvested species

D. Protect-restore functional habitats

E. Prevent non-native species and reduce impacts

F. Improve and maintain water quality# A, C, D, F*

1a2. Describe the degree to which the proposal will contribute to the relevant goal. Quantify your assessment and identify the contribution to ERP targets, when possible.#

Goal A - The project will contribute directly and very significantly to this goal. The role of contaminants on “at-risk” salmonids is a scientific uncertainty identified by CALFED. The study will investigate the impacts of pesticides on rainbow trout which is the same species as steelhead and closely related to Chinook salmon.

Goal C - This project contributes significantly to this goal because the project focuses directly on salmonid species that are important for sustainable commercial and recreational harvest.

Goal D - This study contributes significantly to this goal by providing data that will better describe the chemical habitat in the aquatic ecosystem. The study focuses on the chemical integrity of critical salmonid habitats, including areas proposed for restoration by CALFED.

Goal F - The project will contribute significantly towards this goal by providing information to develop management strategies for improving water quality and reducing the toxic impacts from contaminants. This study directly addresses ERP Target #10 (Reduce losses of fish from pesticides in the Sacramento River and develop programs to assess and monitor contaminant input from agricultural drainage).*

1b. Objectives: What Strategic Objective(s) is/are addressed by this proposal? List Objective (from the table of 32 objectives) and describe potential contribution to ERP Goals. Quantify your assessment, when possible.#

The following objectives are addressed by this proposal. The discussion above addresses the potential contributions to many of these objectives.

Goal A, Objective 3 (Enhance/Conserve biotic native communities within Bay-Delta and its watershed).

Goal C, Objective 1 (Enhance fisheries for salmonids, etc).

Goal D, Objective 2 (Restore aquatic habitat in the Central Valley rivers).

Goal F, Objective 1 (Reduce the loadings and concentrations of toxic contaminants).*

1c. Restoration Actions: Does the proposal address a Restoration Action identified in Section 3.5 of the PSP? Identify the action and describe how well the proposed action relates to the identified Restoration Action.#

The proposal specifically addresses Restoration Action #6 (Contaminants in the Central Valley). Under Restoration Action#6 the PSP states “proposals should demonstrate the link between contaminants and impacts to aquatic ecosystems , including the evaluation of aquatic toxicity.” This proposal provides this information. The project is

strongly related to this restoration action by providing information to develop management strategies for improving water quality and reducing the toxic impacts from contaminants.*

1d. Stage 1 Actions: Is the proposal linked directly, indirectly or not linked to proposed

Stage 1 Actions? If linked, describe how the proposal will contribute to ERP actions during

Stage 1.# Ecosystem Restoration, Stage 1 Action #8 (Complete targeted research on twelve scientific uncertainties). Proposal directly linked to this action.

Environmental Water Quality, Stage 1 Action #5 (Conduct pesticide work/study the ecological significance of pesticide discharges). Proposal directly linked to this action.*

1e. MSCS: Describe how the proposal is linked to the Multi-Species Conservation Strategy and if it's consistent with the MSCS Conservation measures. Identify the species addressed and whether the proposal will

"recover", "contribute to recovery" or "maintain" each species.# The proposal is linked to the MSCS and will contribute to the recovery of threatened/endangered species of salmon and trout.*

1f. Information Richness/Adaptive Probing related to the proposal: Describe the degree to which the proposal provides information to resolve one of the 12 scientific uncertainties (Section 3.3 of the PSP), and whether the proposal offers a prudent approach to answer these uncertainties.#

The proposal may indirectly relate to Scientific Uncertainties #3 (Decline in Productivity) but most closely relates to Scientific Uncertainty #11 (Contaminants in the Central Valley). The degree that the project related to this uncertainty is significant. Data is needed on impacts of pesticides exposure on critical salmonid life stages. This proposal will provide this information.*

1g. Summarize comments from section 1a through 1f related to applicability to CALFED goals and priorities. Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.#

This proposal is excellent and satisfies numerous CALFED goals, objectives and scientific uncertainties. The data will provide badly needed information about pesticides and toxicity to salmonids. The proposal is well written, includes clear objectives and presents a good scientific approach. The task and related budgets clearly presented and easy to evaluate.*

APPLICABILITY TO CVPIA PRIORITIES

1i. Describe the expected contribution to natural production of anadromous fish. Specifically identify the species and races of anadromous fish that are expected to benefit from the project, the expected magnitude of the contribution to natural production for each species and race of anadromous fish, the certainty of the expected benefits, and the immediacy and duration of the expected contribution. Provide quantitative support where available (for example, expected increases in population indices, cohort replacement rates, or reductions in mortality rates).#

This project is consistent with AFRP's Central Valley-wide Action 8. Specifically, this Action

calls for evaluating the direct and indirect effects of contaminants on production of anadromous fish. This is a High Priority Action because many native Central Valley fish populations are in decline. A recent study in the Sacramento River Watershed, using rainbow trout embryos as the test species, found toxicity in 4 creeks resulting in 80%-100% mortality. This recent study found

that water dominated by urban storm runoff and wastewater treatment plant effluent were high in toxicity. It is difficult to determine the exact effect water quality degradation has on a population, so the proponents would utilize three primary tools for estimating toxic effects (e.g., chemical monitoring, biological assessments and toxicity testing). Although there is an extensive literature on salmonid toxicology, almost nothing is known about the precise role of contaminants on Central Valley populations. Biological monitoring confirms species are in decline (USFWS 1999) and chemical monitoring indicates many chemicals are present in Central Valley water bodies (Cooke and Connor 1999). A critical missing piece is an understanding of the toxicity of the system to the species of concern. The direct effect of contaminants must be included in any Central Valley salmonid population model. The expected benefit to rainbow trout/steelhead/salmon is difficult to ascertain, since we know so little about the magnitude of the problem. The immediacy and duration of benefits, if we were to follow up on this study with actions to mediate for the pollutants, could be prompt and long-term.*

1j. List the threatened or endangered species that are expected to benefit from the project. Specifically identify the status of the species and races of anadromous fish that are expected to benefit from the project, any other special-status species that are expected to benefit, and the ecological community or multiple-species benefits that are expected to occur as a result of implementing the project.# Sacramento River Winter-run ESU - Endangered; Central Valley Spring-run ESU -

Threatened; Calif Central Valley ESU Steelhead - Threatened; fall and late-fall chinook candidate. Additional multi-species benefits could occur indirectly. These benefits could include both the lower trophic levels (invertebrates) and higher trophic levels (piscivores).*

1k. Identify if and describe how the project protects and restores natural channel and riparian habitat values. Specifically address whether the project protects and restores natural channel and riparian habitat values, whether the project promotes natural processes, and the immediacy and duration of benefits to natural channel and riparian habitat values.# This project does not directly address protection of natural channel and riparian habitat values, but the results of the toxicity testing may result in new knowledge, that, when applied, could result in actions to protect natural channels. For example, if urban stormwater runoff is found to be toxic, then multiple actions may be put in place to detoxify urban storm runoff prior to releasing it into stream channels. Perhaps increased flows would be utilized to reduce toxicity by diluting the storm runoff. The resulting impact is that multiple natural processes could be restored. The immediacy of benefits would be prompt, but first the study will need to be carried out, the results analyzed, the actions identified, funding found, projects implemented etc, prior to direct benefits occurring in the natural channel.*

1l. Identify if and how the project contributes to efforts to modify CVP operations. Identify the effort(s) to modify CVP operations to which the proposed project would contribute, if applicable. Efforts to modify CVP operations include modifications to provide flows of suitable quality, quantity, and timing to protect all life stages of anadromous fish as directed by Section 3406 (b)(1)(B) of the CVPIA, including flows provided through management of water dedicated under Section 3406(b)(2) and water acquired pursuant to Section 3406(b)(3).# The proposed project may eventually contribute to efforts to modify CVP operations. For example, if toxicity is determined to be present in specific study areas, then CVP operations could be modified to provide dilution flows to protect specific life stages of anadromous fish

(e.g. embryos). The distribution of toxicity will help to identify land use practices that may contribute to toxicity and the possibility of utilizing flows to manage the deleterious effects.*

1m. Identify if and how the project contributes to implementation of the supporting measures in the CVPIA. Identify the supporting measure(s) to which the proposed project would contribute, if applicable. Supporting measures include the Water Acquisition Program, the Comprehensive Assessment and Monitoring Program, the Anadromous Fish Screen Program, and others.# This project does not directly contribute to implementation of the supporting measures in the CVPIA. It could indirectly contribute to the Comprehensive Assessment and Monitoring Program and/or the Anadromous Fish Restoration Program (e.g. if, by identifying where the toxicity is coming from actions could be identified that could remedy the situation and assist in doubling the natural production of anadromous fish).*

1n. Summarize comments from section 1i through 1m related to applicability to CVPIA priorities (if applicable, identify the CVPIA program appropriate to consider as the source of CVPIA funding [for example, the Anadromous Fish Restoration Program, Habitat Restoration Program, Water Acquisition Program, Tracy Pumping Plant Mitigation Program, Clear Creek Restoration Program, Comprehensive Assessment and Monitoring Program, and Anadromous Fish Screen Program]). Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.# The proposed study indirectly addresses the CVPIA restoration goal to make all reasonable efforts to at least double natural production of anadromous fish. It also addresses the biological principle: "Natural habitat components and the restoration of ecosystem function and viability will be emphasized in the planning and implementation of the CVPIA." The strength of the proposal lies in the experience of the applicants and the collaborative fashion in which they are working with the many participants in the Sacramento River Watershed Program. The project is being proposed by participants in this program and results from the project will form the basis for continued information exchange and assistance for tributary watershed groups. It is always difficult to determine the exact effect water quality degradation has on a fish population. Although there is an extensive literature collection on salmonid toxicology, almost nothing is known about the precise role of contaminants on Central Valley populations. A critical missing piece is an understanding of the toxicity of the system to the species of concern. This proposal would give us much needed information on one part of the question. Indirectly, this proposal also supports Central Valley-wide Action 1 to provide educational outreach (see description under 4.b below).*

RELATIONSHIP TO OTHER ECOSYSTEM RESTORATION PROJECTS

2a. Did the applicant explain how the proposed project relates to other past and future ecosystem restoration projects, as required on page 57 in the PSP? Type in yes or no.#yes*

2b. Based on the information presented in the proposal and on other information on restoration projects available to CALFED and CVPIA staff, describe how the proposed project complements other ecosystem restoration

projects, including CALFED and CVPIA. Identify projects or types of projects that the proposed project would complement, now or in the future.

Identify source of information.# Compliments restoration efforts for anadromous salmonids, particularly investigations of contaminant effects, by evaluating one of the identified stressors to these species. Many other projects are looking at indirect contaminant effects on salmonids, but there has not been much effort to determine direct contaminant effects. Fills a gap in information on toxicity levels and identifying toxicants involved. Information source: Proposal*

RESULTS AND PROGRESS ON PREVIOUSLY FUNDED CALFED AND CVPIA PROJECTS, INCLUDING REQUESTS FOR NEXT-PHASE FUNDING

3a1. Based on the information presented in the proposal and on project reports and data available to CALFED and CVPIA staff, has the applicant previously received CALFED or CVPIA funding? Type CALFED, CVPIA, both, or none.#CALFED*

3a2. If the answer is yes, list the project number(s), project name(s) and whether CALFED or CVPIA funding. If the answer is none, move on to item 4.#

98C07 - Fathead Minnow Toxicity

98C08 - Algal Toxicity

98C09 - Sediment Water Quality Planning*

3b1. Based on the information presented in the proposal and on project reports available to CALFED and CVPIA staff, did the applicant accurately state the current status of the project(s) and the progress and accomplishments of the project(s) to date? Type yes or no.#no.*

3b2. If the answer is no, identify the inaccuracies:#Proponent didn't consider other agency projects and this is the first proposal from this individual.*

3c1. Has the progress to date been satisfactory? Type yes or no.#yes*

3c2. Please provide detailed comments in support of your answer, including source of information (proposal or other source):#Projects initially experienced significant delays in completing contract agreements. Once contracts were signed work began and is progressing well on the new time lines. Source: Quarterly progress reports, contract information*

REQUESTS FOR NEXT-PHASE FUNDING

3d1. Is the applicant requesting next-phase funding? Type yes or no.#no*

3d2. If the answer is yes, list previous-phase project number(s) here. If the answer is no, move on to item 4.##*

3e1. Does the proposal contain a 2-page summary, as required on pages 57 and 58 of the PSP? Type yes or no.##*

3e2. Based on the information presented in the summary and on project reports available to CALFED and CVPIA staff, is the project ready for next-phase funding? Type yes or no.##*

3e3. Please provide detailed comments in support of your answers, including source of information (proposal or other source):##*

LOCAL INVOLVEMENT

4a. Does the proposal describe a plan for public outreach, as required on page 61 of the PSP? Type yes or no.## yes*

4b. Based on the information in the proposal, highlight outstanding issues related to support or opposition for the project by local entities including watershed groups and local governments, and the expected magnitude of any potential third-party impacts.## Educational Objectives - Public Outreach and Education is one of the primary goals of the

Sacramento Watershed Restoration Program (SWRP). The SWRP has a Public Outreach and Education Subcommittee with the following mission: To facilitate the exchange of information concerning the watershed and to encourage the broadest based participation in the management, protection and enhancement of the Sacramento River Watershed. Increased public understanding of resource and contaminant issues will be necessary if we are to develop consensus-based solutions. Although the proposed study is not being submitted as an Environmental Education Project, the existing "infrastructure" of the SWRP will be used to help educate stakeholders on the goals, objectives and results of this study. SWRP education and outreach tools include a website (Sacrivier.org) where the proposal and all reports will be posted; a quarterly newsletter, "Waterways" which will publish periodic updates; a traveling display booth which will have information on the project; and regularly scheduled meetings and education workshops where current status of SWRP projects are actively "liaisoned" to participants. Over 1000 individuals routinely receive information on SWRP activities.*

ENVIRONMENTAL COMPLIANCE

4d. List any potential environmental compliance or access issues as

identified in the PSP checklists.# They do not have locations mapped out and no access letter submitted for private land.*

4e. Specifically highlight and comment on any regulatory issues listed above that may prevent the project from meeting the projected timeline.#None*

COST

5a. Does the proposal include a detailed budget for each year of requested support? Type yes or no.# yes*

5b. Does the proposal include a detailed budget for each task identified? Type yes or no.# yes*

5c. Is the overhead clearly identified? Type yes or no.# yes*

5d. Are project management costs clearly identified? Type yes or no.# yes*

5e. Please provide detailed comments in support of your answers to questions 5a - 5d.# All information requested has been provided by project proponent in a clear, concise, and understandable format.*

COST SHARING

6a. Does the proposal contain cost-sharing? Type yes or no.# yes*

6b. Are applicants specifically requesting either state or federal cost share dollars? Type state, federal, or doesn't matter.# federal*

6c. List cost share given in proposal and note whether listed cost share is identified (in hand) or proposed.

6c1. In-kind:# \$60,000.00*

6c2. Matching funds:# \$60,000.00. \$120,000.00 divided by \$530,000.00*

6c3. Show percentage that cost sharing is of total amount of funding requested along with calculation.# 22.6%*

6d. Please provide detailed comments in support of your answers to questions
6a - 6c3.# n/a*